**Polygon:**
* A closed figure made up of line segments.
* Sides of a polygon are the segments.
* Vertices are the spots where 2 sides come together.
* Each side intersects exactly 2 other sides, but only at their endpoints.
* Name the polygon by the letters of the vertices going in consecutive order.

\[ \triangle ABC \]  
\[ \text{ZWXY} \]  
\[ \text{NMLPO} \]
**Concave:**
* When there are **dents**.
* If you can connect 2 points on the figure and the segment leaves the figure.

![Concave figures](image)

**Convex:**
* When there are no **dents**.
* If you can connect 2 points on the figure and the segment stays in the figure.

![Convex figures](image)
Classify the polygons by the number of sides.

<table>
<thead>
<tr>
<th>Number of sides</th>
<th>Polygon Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>triangle</td>
</tr>
<tr>
<td>4</td>
<td>quadrilateral</td>
</tr>
<tr>
<td>5</td>
<td>pentagon</td>
</tr>
<tr>
<td>6</td>
<td>hexagon</td>
</tr>
<tr>
<td>7</td>
<td>heptagon</td>
</tr>
<tr>
<td>8</td>
<td>octagon</td>
</tr>
<tr>
<td>9</td>
<td>nonagaon</td>
</tr>
<tr>
<td>10</td>
<td>decagon</td>
</tr>
<tr>
<td>12</td>
<td>dodecagon</td>
</tr>
<tr>
<td>n</td>
<td>n-gon</td>
</tr>
</tbody>
</table>

Regular Polygon:
* A convex polygon with all sides congruent and all interior angles are congruent.

Perimeter:
* The distance around a figure.
* Sum of all the sides.
1. Name each polygon by the number of sides. Then classify it as convex or concave, regular or irregular.

a. Quadrilateral convex irregular

b. A-gon concave irregular

2. A masonry company is contracted to lay three layers of decorative brick along the foundation for a new house given the dimensions below.

   \[ p = 30 + 8 + 30 + 36 + 24 + 12 + 36 + 40 = 216 \text{ ft} \]

   a. Find the perimeter of the foundation to determine how many bricks the company will need to complete the job. Assume that one brick is 8 inches long.
3. Find the perimeter of pentagon ABCDE with A (0, 4), B (4, 0), C(3, -4), D (-3, -4) and E (-3, 1)

4. The width of a rectangle is 5 less than twice its length. The perimeter is 80 cm. Find the length of each side.